

113.2 - Portland Cement Clinkers (solid form)

These SRMs provide certified values for the abundance of major phases in cement clinkers, i.e., the percentages of alite (C_3S), belite (C_2S), aluminate (C_3A), and ferrite ($C_2(A,F)$). NOTE: In cement chemist notation, C=CaO, S=SiO₂, A=Al₂O₃ and F=Fe₂O₃.

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM	2686a	2687	2688
Description	Portland Cement Clinker	Portland Cement Clinker	Portland Cement Clinker
Unit Size	(4 x 7 g)	(3 x 10 g)	(3 x 10 g)
Component (mass fraction, in %)			
Alite (C_3S)	63.53	71.24	64.95
Alkali Sulfates	0.86		
Aluminate (C_3A)	2.46	11.82	4.99
Aluminum oxide (Al_2O_3)	(3.701)	(5.53)	(4.90)
Aphthitalite	0.74		
Arcanite	0.27	0.92	
Belite (C_2S)	18.80	12.57	17.45
Calcium oxide (CaO)	(64.085)	(67.20)	(66.50)
Ferrite (C_2AF)	10.80	2.81	12.20
Free CaO		(2.2)	(0.2)
Iron oxide (Fe_2O_3)	(3.654)	(1.98)	(4.07)
Loss on Ignition at 1000 °C	(0.509)	(0.17)	(0.21)
Magnesium oxide (MgO)	(4.813)	(1.48)	(0.98)
Manganese trioxide (Mn_2O_3)	(0.128)	(0.04)	(0.03)
Periclase	3.40		
Component (mass fraction, in %)			
Phosphorus pentoxide (P_2O_5)	(0.068)	(0.29)	(0.08)
Potassium oxide (K₂O)	(0.470)	(0.72)	(0.35)
Silicon dioxide (SiO₂)	(21.713)	(21.43)	(22.68)
Sodium oxide (Na₂O)	(0.198)	(0.14)	(0.11)
Strontium oxide (SrO)	(0.043)	(0.11)	(0.13)
Sulfur trioxide (SO₃)	(0.388)	(0.83)	(0.31)
Titanium dioxide (TiO₂)	(0.220)	(0.27)	(0.24)
Total	(99.481)	(100.20)	(100.60)

Certified values are normal font.

Reference values are italicized.

Values in parentheses are for information only.